

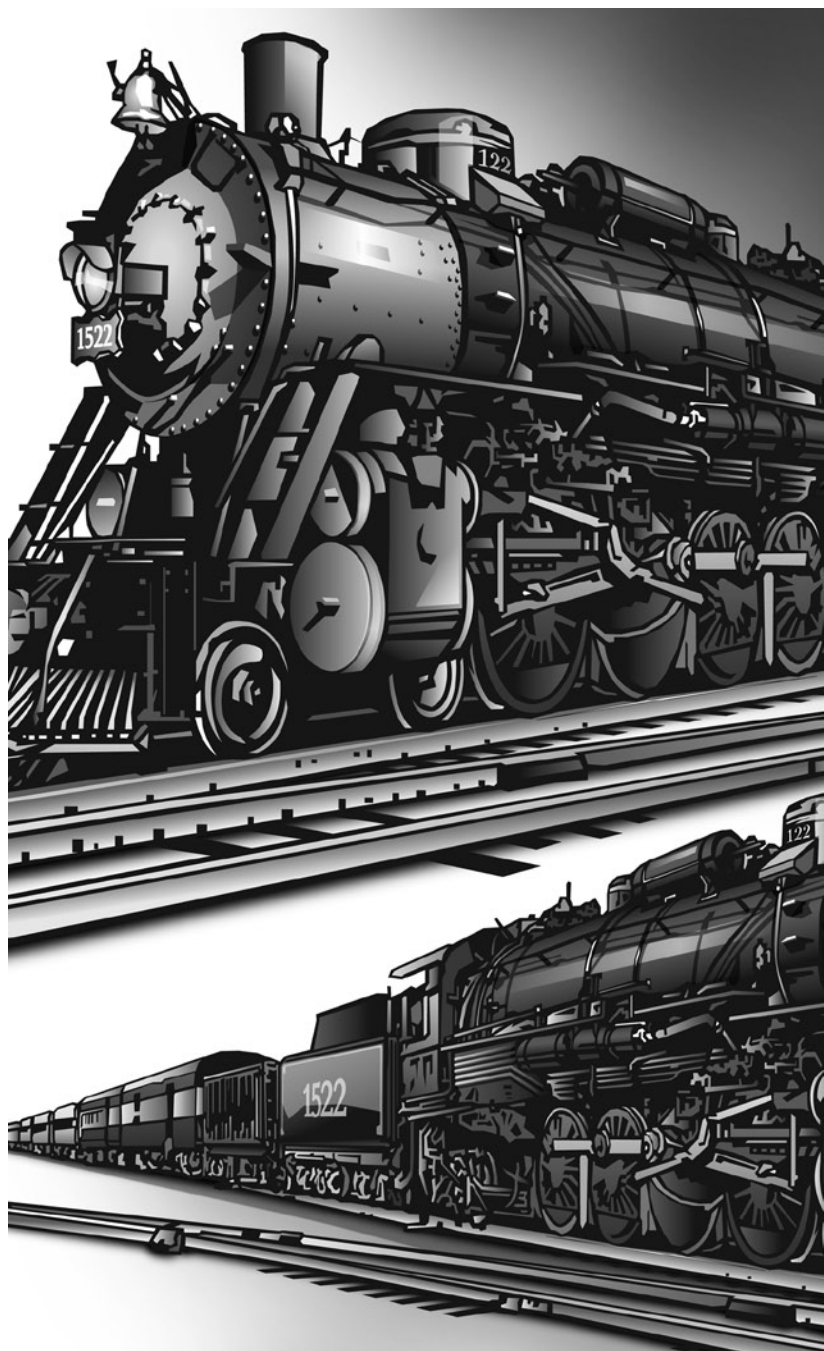
Steam Locomotives

*(A lack of) vision, purpose, network,
knowledge, leadership*

The year 1689 saw the first commercial application to the millennia-old idea to use boiling water to produce mechanical motion. What started in Thomas Savery's water pump evolved into the main power source of the industrial revolution over the subsequent 150 years or so.

The use of high-pressure steam reduced the weight of the engine so much that eventually it could be put on wheels. That gave birth to the steam locomotive. In 1825, George Stephenson built the Locomotion No. 1 (originally called Active) for the Stockton and Darlington Railway, the first public steam railway in the world. With the success of his 1829 Rocket, Stephenson's company was established as the preeminent builder of steam locomotives in the United Kingdom, the United States, and much of Europe.

Following Stephenson's example, steam locomotives were built by companies in virtually every industrializing country in the world. In a fierce competitive race, they made locomotives ever faster and more powerful. Over decades, the market leaders in the United States were Baldwin Locomotive Works, American Locomotive Company (ALCO), and Lima Locomotive Works.



Baldwin built its first steam locomotive in 1831. The Pennsylvania-based company was very successful; its sales peaked in 1906 with 2,666 steam locomotives delivered to customers. The emergence of first the diesel and later the electric locomotive were challenges that Baldwin failed to master. It stopped producing locomotives altogether in 1956 and went out of business in 1972.

Baldwin, and other steam locomotive manufacturers, defined themselves poorly. They created a myopic view based on the product they could see (the steam engine) rather than have the vision to see themselves as industrial manufacturers that could create trains powered in a range of ways.

Had Baldwin known about Plasticity and leveraged it for choosing the company's destiny, we might be able to click on Baldwin's web site and read, "Baldwin stands for speed and power. Whenever you want to harness the power of steam in boilers and turbines or start thinking about a new high-speed railway either with diesel or with electricity, we are the people to talk to."